1. A system (100) for recording, transmitting and analyzing data and information (D and D*, resp.) accrued from, in particular low-frequency, electromagnetic radiation, comprising

- several spatially separated measuring stations (20 and 20*, resp.)
  - -- with at least one respective, in particular broadband, antenna body (30), for recording signals (S and S*, resp.) which are assignable to the electromagnetic radiation, and
  - -- with at least one respective time measurement facility (38), in particular at least one respective G[lobal]P[ositioning]S[ystem] clock for determining the respective time progression, in particular the respective arrival time, of the recorded signals (S and S*, resp.),

characterized in that

- the electromagnetic radiation originates from at least one impulse source of natural and/or artificial origin, in particular from at least one atmospheric discharge (P) or from at least one transmitter (K), and
- that
  - -- the altitude (H) of the impulse source, in particular the emission altitude or the transmission altitude, and/or
  - -- the directionality (C), in particular the spatial direction path, of the impulse emission or impulse broadcast caused by the impulse source
- may be localized in that the deviation of the arrival time of the signal (S) on the measuring station (20) located closest to the impulse source from the arrival time of the signal (S*) on at least one, preferably at least two, measuring stations (20*) which are not located closest to said impulse source, is determinable.

2. The system according to claim 1, characterized in that in particular with line-formed impulse sources, the directionality (C) of the impulse emission or impulse broadcast

- is identifiable as being essentially vertical, when the amplitude (A) of the signal (S and S*, resp.) is reciprocally proportional to the distance (R) between the impulse source and the respective measuring station (20 and 20*, resp.), and
- is identifiable as being essentially horizontal, when the amplitude (A) of the signal (S and S*, resp.) deviates from the reciprocal proportionality, wherein this deviation is correctable by considering
  - -- the altitude angle, and
  - -- the angle between the impulse emission or impulse broadcast axis, in particular the discharge axis and the direction to the respective measuring station (20 and 20*, resp.).

3. The system according to claim 2, characterized in

- that several signals (S and S*, resp.) which originate from impulse sources in a spatially limited and/or time limited range can be combined, and
- that the deviation of the amplitude (A) of an individual signal (S and S*, resp.) in particular for providing the average deviation of the amplitude (A), can be correlated with the group assigned to the signal (S and S*, resp.), in particular in order to eliminate a damping effect conditional upon a variable ground conductivity.

4. The system according to at least one of claims 1 to 3, characterized in that with an impulse emission or impulse broadcast from altitudes (H) in the kilometer range, using comparisons of distributions of time deviations (dT) measured on at least one measuring station (20) located closest to the impulse source, and on at least two measuring stations (20*) which are not located closest to said impulse source, at least two impulse emission or impulse broadcast times, in particular at least two discharge times (T_P), are detectable.

5. The system according to at least one of claims 1 to 4, characterized in that the altitude (H) of the impulse source and/or the directionality (C) of the impulse emission or impulse broadcast is determinable using a single measuring station (20) which is located closest to the impulse source, and using a single measuring station (20*) which is not located closest to the impulse source, when the incident direction of the impulse emission or impulse broadcast is determinable.

6. The system according to at least one of claims 1 to 5, characterized in that the measuring stations (20 and 20*, resp.) each comprise at least one station electronic system (40) which is arranged separately from the antenna body (30) for processing the signals (S and S*, resp.) from the data or information (D and D*, resp.) which are recorded using the antenna body (30) in question, wherein the station electronic system (40) comprises

- at least one amplification unit (42) for the low-noise amplification of the signals (S and S*, resp.) recorded using the antenna body (30) in question;
- at least one filter unit (44) for filtering the signals (S') amplified using the amplification unit (42), in particular with regard to technical interference signals for example originating from radio transmitters;
- at least one A[nalog]/D[igital] converter unit (46) for converting the signals (S'') from the digital data and information (D and D*, resp.) which have been filtered using the filter unit (44); and
- at least one self-regulating threshold for optimizing the sensitivity of the station electronic

system (40).

7. The system according to at least one of claims 1 to 6, characterized in that the signal (S and S*, resp.)

- is provided with at least one, in particular multiple, time identification and/or with at least one time grid and/or with at least one time stamp, and is leveled as well as optimized, in particular using the amplification unit (42) and/or using the filter unit (44), and
- with regard to its signal structure, in particular with regard to its signal structure lying above the self-regulating threshold, is analyzed following this leveling and optimization, so that for the signal (S and S*, resp.), in particular in dependence on its impulse form, a plurality or large number of time and/or structural information is provided.

8. The system according to at least one of claims 1 to 7, characterized in

- that the antenna body (30) is designed for installation in the open air in a mechanically self-supporting form, without movable and/or weather-sensitive components,
- that the primary circuit of the antenna body (30) is galvanically separated from the secondary circuit of the antenna body (30), and
- that the electromagnetic fields are broadband and can be decoupled with low noise, and can therefore be measured with time accuracy.

9. The system according to at least one of claims 1 to 8, characterized in that the measuring stations (20 and 20*, resp.)

- are arranged at a distance (d) of approximately one hundred kilometers from each other, and
- respectively stand in bi-directional, in particular wired and/or wireless connection (60), with a central station (10), to which at least a part, in particular at least one selected parameter, of the data and information (D and D*, resp.) which is recorded, processed and stored by the respective measuring stations (20 and 20*, resp.) can be accrued.

10. The system according to at least one of claims 1 to 9, characterized by at least one interface (16, 18) for incorporating at least one further climatological and/or meteorological data and information source (Q) for characterizing the overall weather situation which in particular can be evaluated using M[odel]O[utput]S[tatistics], in particular with the interface (16, 18) being assigned to a central station (10).

11. A method for recording, transmitting and analyzing data and information (D and D*, resp.)

accrued from, in particular low-frequency, electromagnetic radiation, where the electromagnetic radiation originates from at least one impulse source of natural and/or artificial origin, in particular from at least one atmospheric discharge (P) or from at least one transmitter (K), in which method

[i] signals (S and S*, resp.) which are assignable to the electromagnetic radiation are recorded using several spatially separated measuring stations (20 and 20*, resp.), in particular using at least one, for example broad band, antenna body (30) which is assigned to the respective measuring station (20 and 20*, resp.),

[ii] the respective time progression, in particular the respective arrival time, of the recorded signals (S and S*, resp.) is determined using at least one time measurement facility (38), in particular using at least one GPS clock, which is assigned to the respective measuring station (20 and 20*, resp.), and

[iii] the altitude (H) of the impulse source, in particular the emission altitude or the broadcast altitude, and/or the directional information (C), in particular the spatial direction path, of the impulse emission created by the impulse source is localized by determining the difference between the arrival time of the signal (S) at the measuring station (20) located closest to the impulse source and the arrival time of the signal (S*) at at least one, preferably at least two, measuring stations (20*) which are not located closest to said impulse source.

12. The method according to claim 11, characterized in that the directional information (C) of the impulse emission or impulse broadcast

- is identified as being essentially vertical, when the amplitude (A) of the signal (S and S*, resp.) is reciprocally proportional to the distance (R) between the impulse source and the respective measuring station (20 and 20*, resp.), and
- is identified as being essentially horizontal, when the amplitude (A) of the signal (S and S*, resp.) deviates from the reciprocal proportionality, wherein this deviation can be corrected by taking into account
  - -- the altitude angle, and
  - -- the angle between the impulse emission or impulse broadcast axis, in particular discharge axis, and the direction to the respective measuring station (20 and 20*, resp.).

13. The method according to claim 11 or 12, characterized in that impulse emissions or impulse broadcasts, in particular discharges (P), within a cloud (W) and/or between at least two clouds (W) can be differentiated from impulse emissions or impulse broadcasts, in particular discharges (P), between the cloud (W) and the earth (E).

14. The method according to at least one of claims 11 to 13, characterized in that using at least one station electronic system (40)

- the electromagnetic radiation which typically occurs in individual waves is analyzed in relation to its spectral properties using F[ast]F[ourier]T[ransformation],
- the respective time progression of the signals (S and S*, resp.) is recorded in full with variable pulse forms,
- even with high signal rates, all signals (S and S*, resp.) are recorded with no down time, and/or
- in particular on the basis of at least one algorithm, signal-specific parameters for classifying and assigning the signals (S and S*, resp.) to specific atmospheric processes are determined.

15. The method according to at least one of claims 11 to 14, characterized in

- that the signals (S and S*, resp.) which arrive at the measuring stations (20 and 20*, resp.) are provided with at least one precise time identification, in particular signals (S and S*, resp.) from the same impulse source are given uniform time identifications, and
- that the deviation of the arrival time of the signal (S) at the measuring station (20) located closest to the impulse source from the arrival time of the signal (S*) at the measuring stations (20*) not located closest to the impulse source is determined using time identification.

16. The method according to at least one of claims 11 to 15, characterized in that instead of or as a supplement to the localization of the altitude (H) of the impulse source and/or the directional information (C) of the impulse emission (= method step [iii] in claim 11), at least one of the measuring stations (20 and 20*, resp.) is adjusted and/or calibrated.

17. The method according to claim 16, characterized in that

[iii.a] the position, in particular the location and/or the altitude, of the impulse source is localized in that, to the exclusion of the measuring station (20 and 20*, resp.) to be adjusted an/or to be calibrated, the respective difference of runtime of impulses from the same impulse source to the respective measuring station (20 and 20*, resp.) is determined from the calculated respective time progression, in particular from the calculated respective arrival time,

[iv] the respective time progression, in particular the respective arrival time, of the signals (S and S*, resp.) originating from the localized impulse source and recorded on the

measuring station (20 and 20*, resp.) to be adjusted and/or to be calibrated is calculated,

[v] the difference between the calculated respective time progression, in particular the calculated respective arrival time, and the determined respective time progression, in particular the determined respective arrival time, of the signals (S and S*, resp.) originating from the localized impulse source and recorded on the measuring station (20 and 20*, resp.) to be adjusted and/or to be calibrated is determined and prepared in a statistically meaningful manner, and

[vi] if necessary

[vi.a] due to the determined respective difference, at least one time correction term, in particular for later localizations and/or positioning procedures, is determined, and

[vi.b] the measuring station (20 and 20*, resp.) to be adjusted and/or to be calibrated is adjusted and/or calibrated using this determined time correction term.

18. Use of at least one system (100) according to at least one of claims 1 to 10 and/or of a method according to at least one of claims 11 to 17

- for the localization
-- of the altitude (H) of the impulse source, in particular of the emission altitude or of the broadcast altitude, and/or
-- of the directionality (C), in particular of the spatial directional path, of the impulse emission or impulse broadcast caused by the impulse source, and/or
- for calibrating and/or for adjusting at least one of the measuring stations (20 and 20*, resp.), and/or
- for the delimitation of impulse emissions or impulse broadcasts, in particular discharges (P), within a cloud (W) and/or between at least two clouds (W) as opposed to impulse emissions or impulse broadcasts, in particular discharges (P), between cloud (W) and earth (E), and/or
- for producing lightning density maps, and/or
- for precisely recording the time and/or structure of the impulses,

even when weak and/or irregularly formed lightning impulses are used.